Designing Business Intelligence Solutions with Microsoft SQL Server

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Course Topics

Implementing Data Models and Reports with Microsoft SQL Server	
01 | Planning a SQL Server BI Solution	04 | Design an ETL solution
02 | Designing a BI Infrastructure	05 | Design BI Data Models
03 | Design a Data Warehouse	06 | Designing Reporting Services solutions

03 | Design a Data Warehouse

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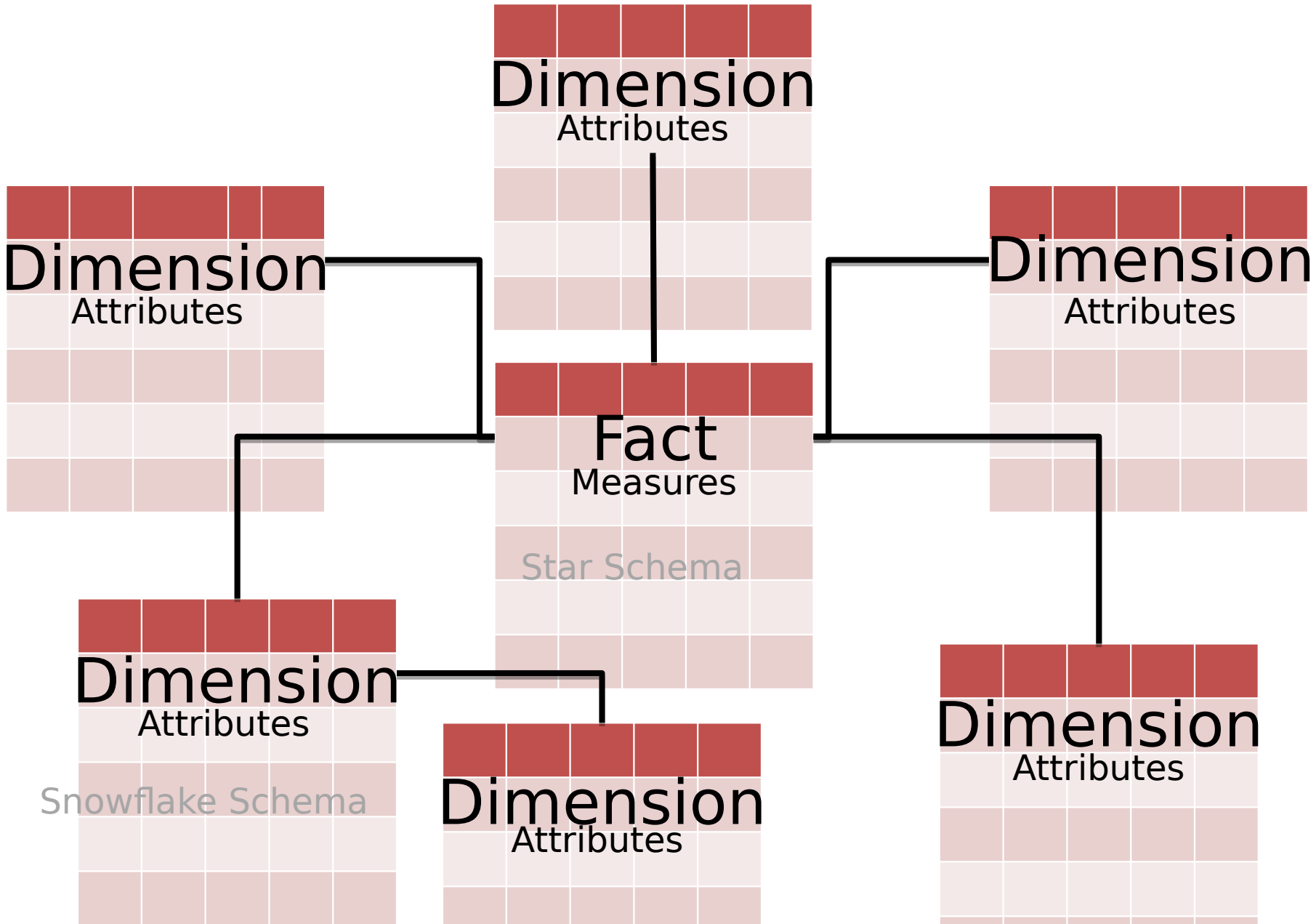
Module Overview

- Describe an Enterprise Data Warehouse
- Design a Data Warehouse Schema
- Performance Considerations
- Handling Slowly Changing Data
- Integrating DQS and MDS.

Describe an Enterprise Data Warehouse

Microsoft

Describe an Enterprise Data Warehouse



Design a Data Warehouse Schema

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Design a Data Warehouse Schema

1. Determine analytical and reporting requirements
2. Identify the business processes that generate the required data
3. Examine the source data for those business processes
4. Conform dimensions across business processes
5. Prioritize processes and create a dimensional model for each
6. Document and refine the models to determine the

Design a Data Warehouse Schema

CustomerKey	CustomerAltKey	Name
1	1002	Amy Alberts
2	1005	Neil Black

Surrogate Key

Business (Alternate) Key

ProductKey	ProductAltKey	ProductName	Color	Size
1	MB1-B-32	MB1 Mountain Bike	Blue	32
2	MB1-R-32	MB1 Mountain Bike	Red	32

Performance Considerations

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Performance Considerations

- File Placement
- Data Type Sizing
- Only using required columns
- Compression
- Indexing - ColumnStore
- Partitioning
- Remember to optimise:
  - Windows Server
  - Hardware

Slowly Changing Dimensions

Microsoft

Slowly Changing Dimensions

CustKey	CustAltKey	Name	Phone
1	1002	Amy Alberts	555 123

Type 1

CustKey	CustAltKey	Name	Phone
1	1002	Amy Alberts	*555 222*

CustKey	CustAltKey	Name	City	Current	Start	End
1	1002	Amy Alberts	Vancouver	Yes	1/1/2000	

Type 2

CustKey	CustAltKey	Name	City	Current	Start	End
1	1002	Amy Alberts	Vancouver	*No*	1/1/2000	*1/1/2012*
4	*1002*	*Amy Alberts*	*Toronto*	*Yes*	*1/1/2012*	

CustKey	CustAltKey	Name	Cars
1	1002	Amy Alberts	0

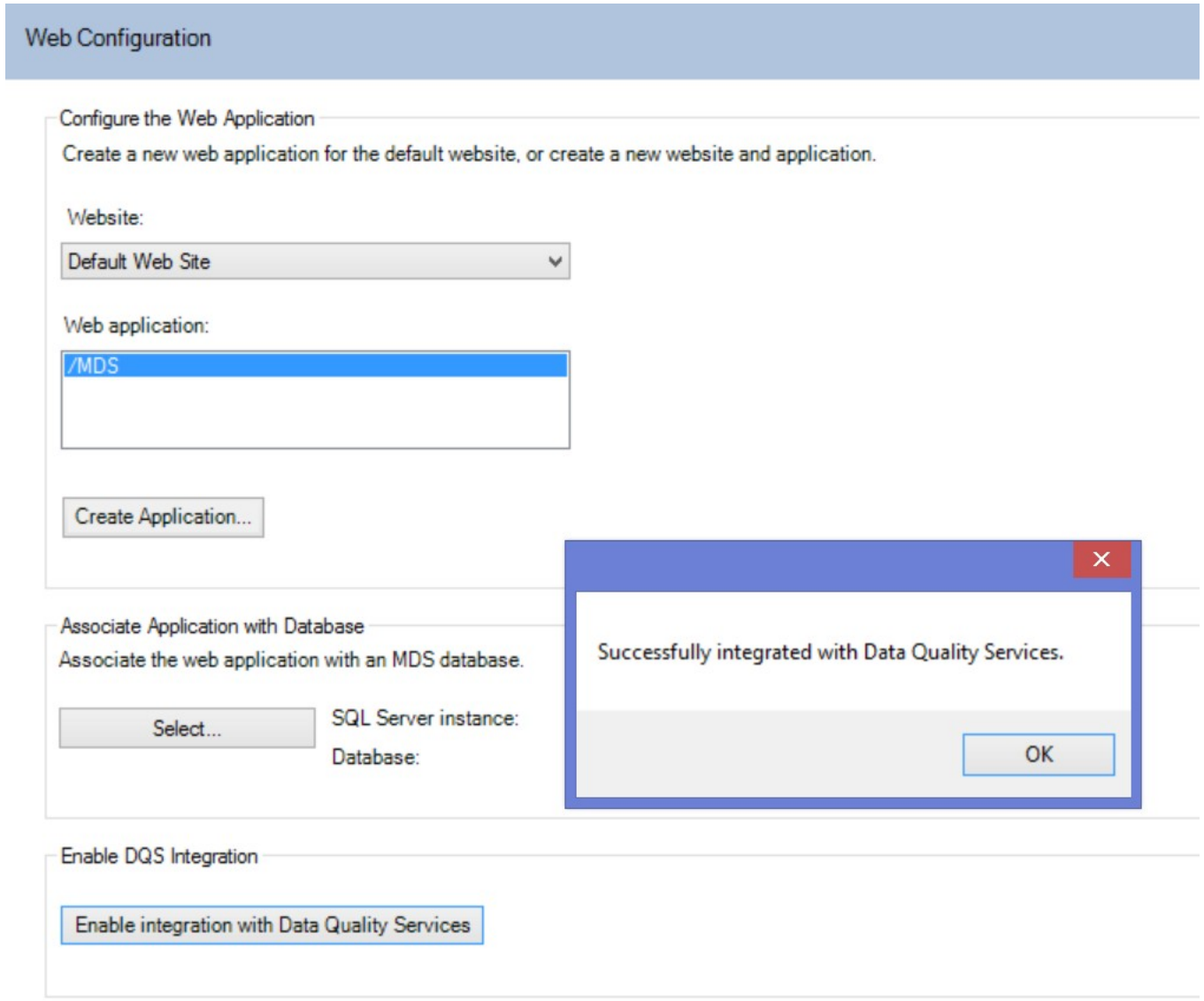
Type 3

CustKey	CustAltKey	Name	*Prior Cars*	*Current Cars*
1	1002	Amy Alberts	*0*	*1*

Integrating MDS and DQS

Microsoft

Integrating MDS and DQS



Demo

Partitioning and ColumnStore

Microsoft

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